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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/650,621	08/28/2003	Lily Springer	TI-34843	7732
23494	7590	03/25/2005	EXAMINER	
TEXAS INSTRUMENTS INCORPORATED P O BOX 655474, M/S 3999 DALLAS, TX 75265			NOVACEK, CHRISTY L	
			ART UNIT	PAPER NUMBER
			2822	

DATE MAILED: 03/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

CK

Office Action Summary	Application No.	Applicant(s)	
	10/650,621	SPRINGER, LILY	
	Examiner	Art Unit	
	Christy L. Novacek	2822	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 2 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 28 August 2003.
- 2a) ☐ This action is FINAL. 2b) ☐ This action is non-final.
- 3) ☒ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-33 is/are pending in the application.
- 4a) Of the above claim(s) 18-20 is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-17 and 21-33 is/are allowed.
- 6) ☐ Claim(s) _____ is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>8/28/03</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

This office action is in response to the communication filed August 28, 2003.

Election/Restrictions

Restriction to one of the following inventions is required under 35 U.S.C. 121:

- I. Claims 18-20, drawn to a semiconductor device, classified in class 257, subclass 565.
- II. Claims 1-17 and 21-33, drawn to a method of making a semiconductor device, classified in class 438, subclass 202.

The inventions are distinct, each from the other because of the following reasons:

Inventions II and I are related as process of making and product made. The inventions are distinct if either or both of the following can be shown: (1) that the process as claimed can be used to make other and materially different product or (2) that the product as claimed can be made by another and materially different process (MPEP § 806.05(f)). In the instant case, the product as claimed can be made by another and materially different process, such as by forming the bipolar and MOS transistors independently of one another.

Because these inventions are distinct for the reasons given above and have acquired a separate status in the art as shown by their different classification, restriction for examination purposes as indicated is proper.

During a telephone conversation with Jacqueline Garner (Reg. No. 36,144) on August 2, 2004 a provisional election was made without traverse to prosecute the invention of Group II, claims 1-17 and 21-33. Affirmation of this election must be made by applicant in replying to this

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Office action. Claims 18-20 are withdrawn from further consideration by the examiner, 37

CFR 1.142(b), as being drawn to a non-elected invention.

Drawings

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the “gate electrodes” (line 12, claim 1) “MOS transistor devices” (lines 8 and 13, claim 1), “MOS type devices” (claims 23 and 24) and “gate electrode” (claim 24) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as “amended.” If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either “Replacement Sheet” or “New Sheet” pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Allowable Subject Matter

Claims 1-17 and 21-33 are allowed.

The primary reasons for the allowance of claims 1-17 is the inclusion therein, in combination as currently claimed, of the limitations of forming a PNP bipolar transistor by forming double diffused DWELL in a DNWELL formed within a P-epi layer, forming a SPWELL in the DNWELL and patterning a polysilicon layer to form gate electrodes for MOS transistor devices and an emitter contact for the PNP transistor. These limitations were found in claims 1-17 and are neither disclosed nor taught by the prior art of record, alone or in combination. Okuno (US 6,803,634) fails to teach forming an epitaxial layer and also fails to teach patterning a polysilicon layer to form the gate electrodes and the emitter contact. Violette (US 6,475,850) fails to teach forming a P-epi layer and also fails to teach forming a SPWELL in the DNWELL region. Violette (US 6,440,812) fails to teach forming an epitaxial layer and also fails to teach patterning a polysilicon layer to form gate electrodes for MOS transistor device and an emitter contact for a PNP transistor.

The primary reasons for the allowance of claims 21-33 is the inclusion therein, in combination as currently claimed, of the limitations of forming a well of a first conductivity type in a semiconductor body of a second conductivity type, forming a collector region of the second conductivity type and a base region of the first conductivity type using the same mask, and forming a polysilicon layer of the second conductivity type contacting the base region. These limitations were found in claims 21-33 and are neither disclosed nor taught by the prior art of record, alone or in combination. Okuno (US 6,803,634) fails to teach forming a well of a first conductivity type and using the same mask to form a collector of the second conductivity type in

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the well and a base region of a first conductivity type within the collector region. Violette (US 6,475,850) fails to teach forming a well of a first conductivity type and using the same mask to form a collector of the second conductivity type in the well and a base region of a first conductivity type within the collector region. Violette (US 6,440,812) fails to teach forming a well of a first conductivity type and using the same mask to form a collector of the second conductivity type in the well and a base region of a first conductivity type within the collector region.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure: Okuno et al. (US 6,803,634), Violette et al. (US 6,475,850) and Violette (US 6,440,812).

This application is in condition for allowance except for the following formal matters:

The “gate electrodes” (line 12, claim 1) “MOS transistor devices” (lines 8 and 13, claim 1), “MOS type devices” (claims 23 and 24) and “gate electrode” (claim 24) must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Prosecution on the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

A shortened statutory period for reply to this action is set to expire **TWO MONTHS** from the mailing date of this letter.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christy L. Novacek whose telephone number is (571) 272-1839. The examiner can normally be reached on Monday-Thursday and alternate Fridays 7:30 - 5:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Amir Zarabian can be reached on (571) 272-1852. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

CLN

March 21, 2005


AMIR ZARABIAN
SENIOR PATENT EXAMINER
EBC CENTER 2800